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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the U.S. Postal Service on the date shown below with sufficient postage as First Class Mail, in an envelope addressed to: MS Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Dated: February 20, 2007 Signature: (Scott E. Charney)

Docket No.: SUNDS3 3.3-123 (PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Forslund et al.

Application No.: 09/936,193 Group Art Unit: 3653

Filed: September 10, 2001 Examiner: M. J. Kohner

For: SCREENING APPARATUS

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF PURSUANT TO 37 C.F.R. §41.37

MS APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Notification Of Non-Compliant Appeal Brief mailed January 25, 2007, concerning the Appeal Brief filed November 3, 2006, an Amended Appeal Brief is submitted herewith.

No fee is believed due in this matter. However, in the event that any fee is due in connection with the foregoing, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: February 20, 2007

Respectfully submitted,

By
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APPLICANT'S AMENDED BRIEF ON APPEAL

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Applicant hereby files this Amended Brief in support of its appeal from the final rejection of claims 10, 11, and 13-27 in the above-referenced application.

REAL PARTY(IES) IN INTEREST

The real party in interest is Metso Paper, Inc. of Sundsvall, Sweden, the assignee of the above-referenced application.

RELATED APPEALS AND INTERFERENCES

To the best of Applicants' current knowledge, there are no related appeals or interferences pending before the U. S. Patent and Trademark Office regarding this United States patent application.

STATUS OF CLAIMS

Claims 1-9 and 12 have been canceled from the present application. Claims 10, 11, and 13-27 are pending in the present application. Claims 10, 11, and 13-27 stand rejected and are the subject of this appeal. Applicants attach a clean copy of the claims hereto as Appendix A.

STATUS OF AMENDMENTS

Applicants hereby confirm that no amendment has been filed subsequent to Final Rejection or Notice of Appeal.

SUMMARY OF CLAIMED SUBJECT MATTER

To aid the Board with its understanding of the claims, Applicants shall summarize the invention by walking through several possible embodiments of the invention. The reference to particular sections of the specification is by example only; accordingly, the elements of the claim are not limited to the specific examples. Although Applicants refer to all of the claims as comprising a single "invention," Applicants use such term for ease of reading only, and it should be understood that each claim covers different and distinct subject matter.

The claimed subject matter relates to a screening apparatus for separating fiber suspensions, preferably pulp suspensions. The invention as set forth in claim 10 is directed to an apparatus for separating a fiber suspension comprising a housing ([00027] 1.2; 1 in Fig. 1), a stator ([00029] 11.3-4; 8 in Fig. 2) mounted centrally within said housing, a rotary screen ([00029] 11.1-3; 7 in Fig. 2) rotatably mounted between said housing and said stator thereby dividing said housing into a screen chamber ([00029] 11.6-7; 9 in Fig. 2) between said

housing and said rotary screen and an accept chamber ([00029] ll.8-9; 10 in Fig. 2) between said rotary screen and said stator, an inlet ([00035] ll.1-2; 4 in Fig. 1) for providing said fiber suspension to said screen chamber, a reject outlet ([00037] ll.1-4; 6 in Fig. 1) for withdrawing rejected fiber suspension from said screen chamber, and an accept outlet ([00035] ll.12-14; 5 in Fig. 1) for withdrawing accepted fiber suspension from said accept chamber, said stator including at least one barrier member ([00033] ll.1-3; 12 in Fig. 1) fixedly attached to said stator and extending axially along the length of said stator, said at least one barrier member extending radially from said stator to said rotary screen ([00041] ll.4-7) whereby said accepted fiber suspension is substantially prevented from tangentially passing said at least one barrier member ([0007] ll.16-19) and said at least one barrier member creates a pulse ([00038] ll.1-4) through said rotary screen, said at least one barrier member including a pulse surface ([00038] ll.5-9; 14 in Fig. 3) facing said rotary screen, said pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen ([00038] ll.5-9), the decrease beginning from the intersection of the barrier member and the stator ([00038] through [00041]; Fig. 3).

The pulp suspension to be screened is generally first introduced into the apparatus through the inlet ([00027] ll.4-7; 4 in Fig. 1) and then into the screen chamber of the housing. Once inside the screen chamber, the pulp suspension may either flow through the rotating screen ([00035] ll.7-12) into the accept chamber or is discharged through a reject outlet ([00037] ll.1-4) for removal from the apparatus. The portion of the pulp suspension that flows through the rotating screen into the accept chamber is called the accept ([00035] ll.9-14). The

character of the pulp suspension screened by this apparatus which consists of larger particles becomes the reject ([00037] ll.1-4), and alternatively, more refined particles become accept ([00036] ll.1-6). This makes it favorable to screen the suspension from "outside" (*i.e.*, the screen chamber) "in" (*i.e.*, through the rotating screen and into the accept chamber) ([00035] ll.9-14). For clarity of illustration, Fig. 2 has been annotated to show the flow of the accept from the outside-in.

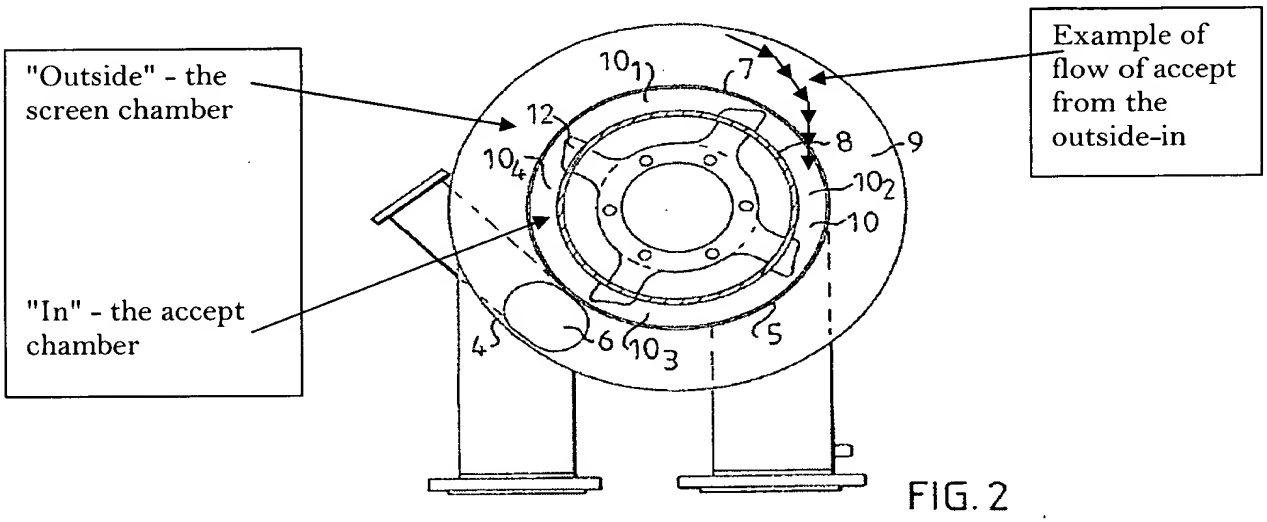

FIG. 2

Pulp suspension that is screened by this apparatus contains larger particles that may damage the inside of the rotating screen ([00036] ll.9-12). With a rotating screen in which the pulp suspension is screened from the outside in ([00035] ll.9-14), the centrifugal force created by the rotating screen ([00024] ll.2-9) keeps the larger, unfavorable particles away from the screen and thus reduces wear on the screen. Therefore, the inside of the screen as well as the stator including at least one barrier member fixedly attached to said stator, will not be subjected to larger particles unable to pass through the slits or openings in the screen ([00019] ll.1-7).

The portion of the accept that passes through the screen from the outside-in is aided by a suction pulse on the rear side of the barrier members ([00024] ll.7-9). This suction pulse causes the accept to flow through the rotating screen and into one of the accept cells (10_1, 10_2, 10_3, 10_4 in Fig. 2) of the accept chamber ([00024] ll.9-12). The main portion of the accept thereafter flows down to the lower accept chamber and out through the accept outlet ([00024] ll.12-14). Alternatively, a smaller portion of accept is instead pressured out of the accept chamber and back into the screen chamber ([00025] ll.3-6). This smaller portion of accept unplugs pulp suspension that is too large to pass through and rather gets stuck in the slits of the rotating screen during the screening process ([00025] ll.6-9). A pressure pulse created by the movement of accept in the radial direction over the pulse surface (14 in Fig. 3) of barrier member (12 in Fig. 3) forces the smaller portion of the accept to flow in the opposite direction as that of the rotating screen. Here, the accept is pressured from the "inside-out" in an unplugging process ([00038] ll.1-12). The pressure pulse is created by the decrease in distance between the pulse surface and the rotary screen in the direction of rotation of the rotary screen ([00038] ll.4-9). For clarity of illustration, Fig. 3 has been annotated to show the flow of the suspension from the outside-in (due to suction pulses aiding in the screening process) and inside-out (due to pressure pulses aiding in the unplugging process).

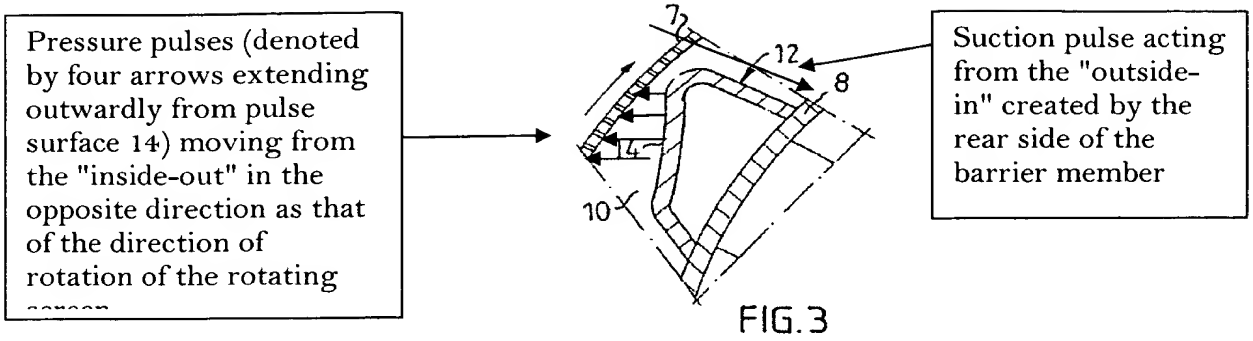

FIG.3

The design of the rear side of the barrier element is dependent on the fact that the suspension is screened from the outside and radially inwards. The rear side of the barrier elements creates a zone of low pressure that creates a suction pulse to draw favorable suspension into the accept chamber ([00034] ll.1-11). In contrast, in order to unplug the rotary screen the suspension has to pass the opposite way in relation to the screening direction. Thus, the barrier element also includes a pulse surface designed to create pressure pulses that force the suspension to go the opposite direction, i.e., from the inside and out ([00038] ll.1-12).

Independent claims 22 and 24 of the present invention are directed to the general subject matter of claim 10. For instance, claim 22 recites an apparatus for separating a fiber suspension through a rotary screen ([00029] ll.1-3; 7 in Fig. 2) rotatably mounted within a housing ([00027] 1.2; 1 in Fig. 1), said apparatus comprising a stator ([00029] ll.3-4; 8 in Fig. 2) mountable centrally within said housing and said rotary screen, said stator including at least one barrier member fixedly attached to said stator and extending axially along the length of said stator ([00033] ll.1-3; 12 in Fig. 1), said at least one barrier member including a pulse surface ([00038] ll.1-4) facing said rotary screen, said pulse surface having a shape such that the distance between said pulse surface and said

rotary screen decreases in the direction of rotation of said rotary screen ([00038] ll.5-9), the decrease beginning from the intersection of the barrier member and the stator ([00038] through [00041]; Fig. 3).

Further, claim 24 recites an apparatus for separating a fiber suspension comprising a housing ([00027] l.2; 1 in Fig. 1), a stator ([00029] ll.3-4; 8 in Fig. 2) mounted centrally within said housing, a rotary screen ([00029] ll.1-3; 7 in Fig. 2) rotatably mounted between said housing and said stator thereby dividing said housing into a screen chamber ([00029] ll.6-7; 9 in Fig. 2) between said housing and said rotary screen and an accept chamber ([00029] ll.8-9; 10 in Fig. 2) between said rotary screen and said stator, at least one barrier pulse member ([00033] ll.1-3; 12 in Fig. 1) extending radially from said stator, wherein said at least one barrier pulse member includes a pulse surface ([00038] ll.5-9; 14 in Fig. 3) having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen ([00038] ll.5-9), the decrease beginning from the intersection of the barrier member and the stator ([00038] through [00041]; Fig. 3).

The elements required in claim 22 and 24 have been discussed in detail above, specifically, with regard to the claim elements in claim 10.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Whether claims 10, 11, and 13-27 are unpantentable under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 3,404,065 to *Ingemarsson* in view of U.S. Patent No. 4,676,903 to *Lampenius et al.*

ARGUMENT

The Examiner has rejected claims 10, 11, and 13-27 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,404,065 to *Ingemarsson* (*"Ingemarsson"*) in view of U.S. Patent No. 4,676,903 to *Lampenius et al.* (*"Lampenius"*). To establish a *prima facie* case of obviousness under § 103, the references relied upon for rejection must suggest the entirety of the claimed invention, and hence, "the prior art reference (or references when combined) must teach or suggest all the claim limitations." M.P.E.P. § 2143.

Ingemarsson and *Lampenius* in combination do not make out a *prima facie* case of obviousness with respect to claims 10, 11, and 13-27 because these references, even if taken in combination, do not teach or suggest the recitations in independent claims 10, 22, and 24 of a stator including at least one barrier member fixedly attached to said stator, and extending axially along the length of said stator, said at least one barrier member extending radially from said stator to said rotary screen whereby said accepted fiber suspension is substantially prevented from tangentially passing said at least one barrier member and said at least one barrier member creates a pulse through said rotary screen, said at least one barrier member including a pulse surface facing said rotary screen, said pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from the intersection of the barrier member and the stator.

In the Examiner's view, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the barrier member of *Lampenius* in a device such as *Ingemarsson*'s, to arrive at the claimed invention.

Notwithstanding, it is important to note that the invention of *Lampenius* concerns a stationary screen utilized in cooperation with a rotor element for screening from the inside-out. In the meantime, *Ingemarsson* concerns a rotary screen in cooperation with a stator for screening from the outside-in. Even in this oversimplification of the two references, one can readily see that they operate in completely opposite manners and any attempted combination of the two references would not have been obvious to one of ordinary skill in the art at the time of the invention.

The Examiner asserts that the fact that *Lampenius* operates with a stationary screen and a rotor element for screening from the inside-out and *Ingemarsson* operates with a rotary screen with a stator for screening from the outside-in, does not effect the combination of taking the pulse member of *Lampenius* and using it in *Ingemarsson*. (*See* Office Action 5 ll.18-20 to 6 ll.1-4, Apr.5, 2006.) Further, the Examiner asserts that the references are in analogous arts and *Lampenius* discloses an effective pulse member. Notwithstanding the Examiner's assertion, one of ordinary skill in the art at the time the invention was made would not combine these references because there would be no motivation to do so.

It is also respectfully submitted that a more detailed review of each of the references will show that not only would it not have been obvious to combine the two references, but the two references cannot be combined in the manner suggested by the Examiner. To begin, it is important to note that the design of the barrier element depends on the method of screening because there is a vast difference in the character of the pulses to be created in order to clear the screen, depending upon what method is used.

In devices with a rotor and a stationary screen, such as *Lampenius*, the inlet chamber is located between the rotor and the screen. The fiber suspension is then pushed along by the barrier member with positive pressure forcing the fibrous material against the screen. The accept portion of the fibrous material filters through the screen toward the outlet. In the case of *Lampenius*, the larger particles forming portions of the rejects are then moved relative to the barrier member along upper plane 3, as shown in FIG. 3a below of *Lampenius*, toward the side plane 4.

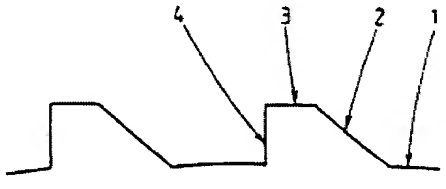

FIG. 3a

Once the material reaches the 90° bend between the upper plane 3 and the side plane 4, a negative pulse, or a zone of low pressure, is created. The zone of low pressure acts to pull material from the screen in an effort to clear the screen of reject material. In this regard, large negative pulses are essential. For example, in column 4, lines 16 through 20 of *Lampenius*, the specification states "this feature of side plane 4 being substantially perpendicular to the bottom plane is essential in order to produce pulses which are more effective in keeping the screen from plugging, as compared with rotors which have a curved surface." (Emphasis added.)

In these types of apparatus, the rotor is in contact with the reject, which is comprised of particles which are necessarily larger than the accepted particles. Such an apparatus is not capable of use with coarse suspensions, since there is a substantial risk of larger, coarse particles getting

stuck and damaging the equipment. For example, large coarse particles may become lodged between the screen and the upper plane 3 of the barrier/pulse member. Such devices are therefore limited to fiber suspensions which are below certain limits of coarseness.

On the other hand, devices with a stator and a rotating screen, such as *Ingemarsson*, are particularly suited for coarse compositions. In such devices, the inlet chamber is located between the screen and outer housing, such that the accepted materials travel through the screen to an accept outlet between the rotating screen and stator. It will be appreciated in this regard that the larger particles remain between the housing and the rotary screen. Accordingly, there is no opportunity for the coarser particles to be lodged between the barrier element and the screen. Further, the centrifugal force in the housing keeps the larger particles away from the screen and thus reduces wear on the screen.

A screening apparatus with a rotor provided with blades would simply not be used to screen coarse suspensions since there is a substantial risk of larger particles getting stuck and damaging the equipment. Therefore, it is highly unlikely that one skilled in the art would look to utilize the barrier member of *Lampenius* in a device such as *Ingemarsson*'s to arrive at the presently claimed invention, as suggest by the Examiner.

In devices such as that presently claimed, where the suspension is screened from the outside-in, the pulses required to clear the screen are pressure pulses. Where the suspension is screened from the inside-out, such as in *Lampenius* (*Ingemarsson* is screened from the outside-in), the pulses needed to clear the screen travel the opposite direction. Thus, the

barrier elements need to create a negative pressure pulse to pull the suspension in the opposite direction, from against the inner surface of the screen.

Neither *Lampenius* nor *Ingemarsson* provide the motivation to make the combination suggested by the Examiner. Rather than finding the motivation to combine the references in the prior art, the Examiner's rejection is an example of hindsight reconstruction in which the Examiner has selected features from several prior art references to create the subject matter claimed herein using the applicant's specification as a "template." *Texas Instruments, Inc. v. U.S. Int'l Trade Comm'n*, 988 F.2d 1165, 26 U.S.P.Q.2d 1018 (Fed. Cir. 1993). Because *Lampenius* and *Ingemarsson* are directed at completely opposite-acting devices, they are not candidates for combination, and cannot be combined to obviate the present invention without resort to inappropriate hindsight reconstruction using the present invention as a template. It is a well-established principle of patent law that hindsight reconstruction of an invention is improper. *See*, for example, *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 U.S.P.Q. 543 (Fed. Cir. 1985); *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

As such, each of claims 10, 11, and 13-27 is deemed allowable over the *Lampenius* and *Ingemarsson* references.

CONCLUSION

For the reasons set forth above, this Honorable Board of Appeals should order the reversal of all of the outstanding rejections.

Dated: February 20, 2007

Respectfully submitted,

By _____

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APPENDIX A - CLAIMS

10. Apparatus for separating a fiber suspension comprising a housing, a stator mounted centrally within said housing, a rotary screen rotatably mounted between said housing and said stator thereby dividing said housing into a screen chamber between said housing and said rotary screen and an accept chamber between said rotary screen and said stator, an inlet for providing said fiber suspension to said screen chamber, a reject outlet for withdrawing rejected fiber suspension from said screen chamber, and an accept outlet for withdrawing accepted fiber suspension from said accept chamber, said stator including at least one barrier member fixedly attached to said stator and extending axially along the length of said stator, said at least one barrier member extending radially from said stator to said rotary screen whereby said accepted fiber suspension is substantially prevented from tangentially passing said at least one barrier member and said at least one barrier member creates a pulse through said rotary screen, said at least one barrier member including a pulse surface facing said rotary screen, said pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from the intersection of the barrier member and the stator.

11. The apparatus of claim 10 wherein said fiber suspension comprises a pulp suspension.

13. The apparatus of claim 10 wherein said at least one barrier member extends outwardly from said stator in an axial direction towards said accept outlet and faces in a direction towards the direction of rotation of said rotary screen.

14. The apparatus of claim 10 wherein said at least one barrier member extends radially outwardly from said stator at a predetermined angle.

15. The apparatus of claim 14 wherein said pulse surface is non-linear.

16. The apparatus of claim 10 wherein said stator, said rotary screen and said housing each has the shape of a cylinder.

17. The apparatus of claim 10 wherein said rotary screen has the shape of a cone, with an increase in diameter in the direction facing towards said accept outlet.

18. The apparatus of claim 10 wherein said at least one barrier member comprises from 2 to 8 barrier members.

19. The apparatus of claim 18 wherein said at least one barrier member comprises from 3 to 4 barrier members.

20. The apparatus of claim 10 wherein the minimum distance between said at least one barrier member and said rotary screen is from 4 to 10 mm.

21. The apparatus of claim 10 wherein said at least one barrier member comprises the outer surface of said stator.

22. Apparatus for separating a fiber suspension through a rotary screen rotatably mounted within a housing, said apparatus comprising a stator mountable centrally within said housing and said rotary screen, said stator including at least one barrier member fixedly attached to said stator and extending axially along the length of said stator, said at least one barrier member including a pulse surface facing said rotary screen, said pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from the intersection of the barrier member and the stator.

23. The apparatus of claim 14, wherein said predetermined angle is an angle facing the direction of rotation of said rotary screen.

24. An apparatus for separating a fiber suspension comprising:

a housing;

a stator mounted centrally within said housing;

a rotary screen rotatably mounted between said housing and said stator thereby dividing said housing into a screen chamber between said housing and said rotary screen and an accept chamber between said rotary screen and said stator;

at least one barrier pulse member extending radially from said stator;

wherein said at least one barrier pulse member includes a pulse surface having a shape such that the distance between said pulse surface and said rotary screen decreases in the direction of rotation of said rotary screen, the decrease beginning from the intersection of the barrier member and the stator.

25. The apparatus of claim 24, further comprising an inlet for providing said fiber suspension to said screen chamber, said at least one barrier pulse member and said rotary screen acting together to create a negative pressure pulse pulling accept portions of said fiber suspension through said rotary screen into said accept chamber.

26. The apparatus of claim 25, wherein said at least one barrier pulse member and said rotary screen act together to create a positive pressure pulse to push portions of said accept from said accept chamber through said rotary screen into said screen chamber.

27. The apparatus of claim 25, further comprising an accept outlet for withdrawing accepted fiber suspension from said accept chamber, wherein said at least one barrier pulse member and said rotary screen act together to create a positive pressure pulse pushing portions of said accept into said accept outlet.

APPENDIX B - EVIDENCE

None

APPENDIX C - RELATED PROCEEDINGS

None